



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

# NEW DRUGS

IN CHARGE OF

**WILLIAM SCHLEIF, M.D.**

Instructor in Pharmacy, University of Pennsylvania

---

## DRUGS: THEIR USE AND ABUSE.

**DRUGS** are substances used in the treatment of disease. The study of drugs is termed *Materia Medica*. In a general sense it includes everything which is known about these agents, whether they be natural or artificial, of vegetable, animal, or mineral origin.

**PHARMACY** deals with the various methods of preparing drugs to present them in a form suitable for administration.

**THERAPEUTICS** refers to the physiological action of remedies; to the effect produced on the constitution as well in health as in disease, and includes an experimental study of their action on the lower animals.

**TOXICOLOGY** is a study of poisons.

**PHARMACOLOGY** is a more general term; it embraces all the subjects relating to the study of remedies, *Materia Medica*, Pharmacy, and Therapeutics.

Various classifications are adopted to simplify the difficult study of *Materia Medica*. The drugs may be arranged according to their physical characteristics and source, the natural subdivisions of vegetable, animal, and mineral drugs resulting. Of these classes the vegetable and mineral claim the largest number, as relatively few drugs of animal origin are in use; nevertheless, the latter are of very great importance. The vegetable drugs, for convenience of study and for purposes of exact identification, are further subdivided into groups according to their botanical characteristics; thus we have natural orders, then genera, and finally species.

The animal drugs are grouped as to origin into classes and orders. This form of classification does well enough for the identification of the drug by the pharmacist, botanist, or zoölogist; but the practising physician or toxicologist is interested solely in the effect of the drug on the human organism, chiefly as a remedy in the treatment of disease. Therefore he chooses a classification as to therapeutic or physiologic effect and divides all drugs into groups like the somnifacients, excito-motors, cardiac stimulants, etc.

For the purpose of administration, medicinal substances may be divided into gases, liquids, and solids. *Gases* form a small and unimportant class. They are readily given by inhalation, enter the blood quickly by reason of the large area exposed in the capillaries of the lungs, and act more promptly than do either liquids or solids. Elimination also is rapid. Rarely they have been introduced into the rectum for medicinal effect; occasionally they are administered dissolved in liquids by way of the stomach. A certain number of very volatile liquids given by inhalation—ether, chloroform, amyl nitrite—more properly belong to the class of gases.

*Liquids*.—The largest number of drugs are administered in the form of liquids. The amount of medicinal action obtained from any drug—provided it is not used solely for its local effect—depends upon the more or less complete manner in which it is absorbed; the rapidity with which this is effected; to a less extent, upon the rate with which it is eliminated. Absorption and elimination usually bear a definite ratio to each other, so that a substance which enters the circulation quickly will leave the system in a comparatively short period of time. The largest number of both liquids and solids—and they form practically the entire list of drugs—admit of but one route of introduction, that of the stomach. It is perfectly evident that all solids must first become liquid before they can be absorbed by the stomach and intestine so as to produce a constitutional effect; consequently drugs are best given in liquid form whenever this is possible or advisable. The advantages of this method are ready absorption, quick action, rapid elimination; the disadvantage, the effect on the palate if the remedy be nauseating or disagreeable.

*Solids*.—These include three classes: mineral drugs, vegetable substances, and organic drugs other than those derived from the vegetable kingdom. Mineral drugs are best given in the form of solution—as powders, pills, capsules, and cachets. Vegetable substances must be specially prepared by the pharmacist or chemist. The third class includes those chemical substances artificially prepared by the chemist, such as the coal-tar derivatives (antipyrin, phenacetin, antifebrin, etc.). The pharmacist's art is necessary for the preparation of most drugs. A perfect pharmaceutical preparation should be effective, so as to represent the full therapeutic value of the drug; permanent, so as to keep for at least a reasonable length of time; appear as pleasant as possible to the eye; it should not offend the palate by its taste and too bulky dose. All of us prefer a glass of pure spring water to the dirty product of the city hydrant; and patients, who are made doubly sensitive by disease, naturally prefer clear and palatable preparations. It is therefore the phar-

macist's aim to present drugs in a form which is most effective and at the same time results in the least amount of inconvenience to the patient. The druggist is just as careful about the appearance of the preparation itself, as he is about the neatness of the finished package; both often form the only gauge by which the patient can estimate his professional ability.

NOTE.—By far the simplest method of administering a solid is in the form of *powder*. We hasten in this way the solution of a substance by increasing the amount of surface exposed to the digestive juices. Not all drugs are suitable: they should be tasteless or at least have no nauseating or otherwise disagreeable effect on the palate; they must remain unaffected in air,—neither attracting nor losing moisture,—be non-volatile, and their dose should not be so large that the quantity of the powder becomes nauseating merely by its bulk. Again, some patients object to the taking of a dry powder, and another method should be selected.

(To be continued.)

